AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all previous listings and versions of claims in this application.

1. (Original) A non-crosslinked polyolefin foam comprising a plastics component and a blowing agent, the plastics component comprising a first constituent and a second constituent, wherein the first constituent is a Ziegler-Natta catalyzed linear low density polyolefin and the second constituent is a low density polyolefin, and wherein the Ziegler-Natta catalyzed linear low density polyolefin has a polydispersity of less than 10 and a melt flow index less than 10g/10 minutes.

2. (Original) The polyolefin foam of Claim 1, wherein the second constituent is a low density polyethylene.

3. (Original) The polyolefin foam of Claim 1, wherein the plastics component comprises from 1% to 85% by weight of the first constituent, and from 99% to 15% by weight of the second constituent.

4. (Original) The polyolefin foam of Claim 3, wherein the plastics component comprises from 5% to 10% by weight of the first constituent, and from 95% to 90% by weight of the second constituent.

5. (Original) The polyolefin foam of Claim 4, wherein the plastics component comprises from 10% to 15% by weight of the first constituent, and from 90% to 85% by weight of the second constituent.

6. (Original) The polyolefin foam of Claim 5, wherein the plastics component comprises primarily of from 15% to 20% by weight of the first constituent, and from 85% to 80% by weight of the second constituent.

7. (Original) The polyolefin foam of Claim 6, wherein the plastics component comprises primarily of from 20% to 25% by weight of the first constituent, and from 80% to 75% by weight of the second constituent.

8. (Original) The polyolefin foam of Claim 7, wherein the plastics component comprises primarily of from 25% to 30% by weight of the first constituent, and from 75% to 70% by weight of the second constituent.

9. (Original) The polyolefin foam of Claim 8, wherein the plastics component comprises primarily of from 30% to 35% by weight of the first constituent, and from 70% to 65% by weight of the second constituent.

10 (Original) The polyolefin foam of Claim 9, wherein the plastics component comprises primarily of from 35% to 40% by weight of the first constituent, and from 65% to 60% by weight of the second constituent.

11. (Currently amended) The polyolefin foam of Claim 1, wherein the ~~form~~ foam has a density less than 90 kg/m^3.

12. (Currently amended) The polyolefin foam of Claim 11, wherein the ~~form~~ foam has a density less than 30 kg/m^3.

13. (Original) The polyolefin foam of Claim 1, wherein the polyolefin foam is a closed-cell foam.

14. (Original) The polyolefin foam of Claim 1, wherein the density of the first constituent is from 917 to 930 kg/m^3.

15. (Original) The polyolefin foam of Claim 1, wherein the crystallization temperatures of the two constituents differ by more than 8°C.

16. (Original) The polyolefin foam of Claim 15, wherein the crystallization temperatures differ by more than 12°C.

17. (Original) The polyolefin foam of Claim 1, wherein the melt flow index of the Ziegler-Natta catalyzed linear low density polyolefin is less than 5g/10 minutes.

18. (Original) The polyolefin foam of Claim 1, wherein the melt flow index of the Ziegler-Natta catalyzed linear low density polyolefin is less than 3g/10 minutes.

19. (Original) The polyolefin foam of Claim 1, wherein the polydispersity of the Ziegler-Natta catalyzed linear low density polyolefin is less than 8.

20. (Original) The polyolefin foam of Claim 19, wherein the polydispersity of the Ziegler-Natta catalyzed linear low density polyolefin is less than 5.

21. (Original) The polyolefin foam of Claim 1 further including nucleating agents and aging agents.

22. (Original) A non-crosslinked polyolefin foam comprising a plastics component and a blowing agent, the plastics component comprising a first constituent and a second constituent, wherein the first constituent is a Ziegler-Natta catalyzed linear low density polyethylene and the second constituent is a polypropylene, and wherein the Ziegler-Natta catalyzed linear low density polyolefin has a polydispersity of less than 10 and a melt flow index less than 10g/10 minutes.

23. (Original) The polyolefin foam of Claim 22, wherein the second constituent is a high-melt strength polypropylene.

24. (Original) The polyolefin foam of Claim 22, wherein the plastics component comprises from 1% to 85% by weight of the first constituent, and from 99% to 15% by weight of the second constituent.

25. (Original) The polyolefin foam of Claim 24, wherein the plastics component comprises from 5% to 10% by weight of the first constituent, and from 95% to 90% by weight of the second constituent.

26. (Original) The polyolefin foam of Claim 25, wherein the plastics component comprises from 10% to 15% by weight of the first constituent, and from 90% to 85% by weight of the second constituent.

27. (Original) The polyolefin foam of Claim 26, wherein the plastics component comprises primarily of from 15% to 20% by weight of the first constituent, and from 85% to 80% by weight of the second constituent.

28. (Original) The polyolefin foam of Claim 27, wherein the plastics component comprises primarily of from 20% to 25% by weight of the first constituent, and from 80% to 75% by weight of the second constituent.

29. (Original) The polyolefin foam of Claim 28, wherein the plastics component comprises primarily of from 25% to 30% by weight of the first constituent, and from 75% to 70% by weight of the second constituent.

30. (Original) The polyolefin foam of Claim 29, wherein the plastics component comprises primarily of from 30% to 35% by weight of the first constituent, and from 70% to 65% by weight of the second constituent.

31. (Original) The polyolefin foam of Claim 30, wherein the plastics component comprises primarily of from 35% to 40% by weight of the first constituent, and from 65% to 60% by weight of the second constituent.

32. (Currently amended) The polyolefin foam of Claim 22, wherein the ~~form~~ foam has a density less than 90 kg/m^3.

33. (Currently amended) The polyolefin foam of Claim 32, wherein the ~~form~~ foam has a density less than 30 kg/m^3.

34. (Original) The polyolefin foam of Claim 22, wherein the polyolefin foam is a closed-cell foam.

35. (Original) The polyolefin foam of Claim 22, wherein the density of the first constituent is from 917 to 930 kg/m^3.

36. (Original) The polyolefin foam of Claim 22, wherein the crystallization temperatures of the two constituents differ by more than 8°C.

37. (Original) The polyolefin foam of Claim 36, wherein the crystallization temperatures differ by more than 12°C.

38. (Original) The polyolefin foam of Claim 22, wherein the melt flow index of the Ziegler-Natta catalyzed linear low density polyolefin is less than 5g/10 minutes.

39. (Original) The polyolefin foam of Claim 38, wherein the melt flow index of the Ziegler-Natta catalyzed linear low density polyolefin is less than 3g/10 minutes.

40. (Original) The polyolefin foam of Claim 22, wherein the polydispersity of the Ziegler-Natta catalyzed linear low density polyolefin is less than 8.

41. (Original) The polyolefin foam of Claim 40, wherein the polydispersity of the Ziegler-Natta catalyzed linear low density polyolefin is less than 5.

42. (Original) The polyolefin foam of Claim 22 further including nucleating agents and aging agents.

43. (Original) A method of manufacturing a non-crosslinked polyolefin foam comprising mixing a resin comprising a first constituent and a second constituent in an extruder, adding a blowing agent to the resulting mixture, and extruding the resulting mix into foam form, wherein the first constituent is a Ziegler-Natta catalyzed linear low density polyolefin and the second constituent is a low density polyolefin, and wherein the Ziegler-Natta catalyzed linear low density polyolefin has a polydispersity of less than 10 and a melt flow index less than 10g/10 minutes.

44. (Original) The method of Claim 43, wherein the second constituent is a low density polyethylene.

45. (Original) The method of Claim 43, wherein the first constituent is present in an amount from 1% to 85% by weight of the total polyolefin content.

46. (Original) The method of Claim 45, wherein the first constituent is present in an amount from 5% to 10% by weight of the total polyolefin content.

47. (Original) The method of Claim 46, wherein the first constituent is present in an amount from 10% to 15% by weight of the total polyolefin content.

48. (Original) The method of Claim 47, wherein the first constituent is present in an amount from 15% to 20% by weight of the total polyolefin content.

49. (Original) The method of Claim 48, wherein the first constituent is present in an amount from 20% to 25% by weight of the total polyolefin content.

50. (Original) The method of Claim 49, wherein the first constituent is present in an amount from 25% to 30% by weight of the total polyolefin content.

51. (Original) The method of Claim 50, wherein the first constituent is present in an amount from 30% to 35% by weight of the total polyolefin content.

52. (Original) The method of Claim 51, wherein the first constituent is present in an amount from 35% to 40% by weight of the total polyolefin content.

53. (Original) The method of Claim 43, wherein the foam is extruded to a density of less than 90 kg/m^3.

54. (Original) The method of Claim 43, wherein the foam is a closed-cell foam.

55. (Currently amended) The method of Claim 43, wherein the density of the first constituent is from 917 to 930 kg/m^3.

56. (Original) The method of Claim 43, wherein the crystallization temperatures of the first and second constituents differ by more than 8°C.

57. (Original) The method of Claim 56, wherein the crystallization temperatures of the first and second constituents differ by more than 12°C.

58. (Original) The method of Claim 43, wherein the first constituent has a melt flow index of less than 5g/10 minutes.

59. (Original) The method of Claim 58, wherein the first constituent has a melt flow index of less than 3g/10 minutes.

60. (Original) The method of Claim 43, wherein the polydispersity of the Ziegler-Natta catalyzed linear low density polyolefin is less than 8.

61. (Original) The method of Claim 60, wherein the polydispersity of the Ziegler-Natta catalyzed linear low density polyolefin is less than 5.

62. (Original) The method of Claim 43, further including mixing nucleating agents and aging agents with the first and second constituents.

63. (Original) The method of Claim 43, wherein the resultant mixture is extruded in a twin-screw extruder.

64. (Original) The method of Claim 43 further including controlling the melt temperature of the mix during extruding.

65. (Original) The method of Claim 64, wherein controlling the melt temperature includes matching the melt temperature of the mix to a pre-determined datum.

66. (Original) The method of Claim 65, wherein the pre-determined datum is determined by extruding 100% of the second constituent.

67. (Original) The foam produced according to the method of Claim 43.

68. (Original) A method of manufacturing a non-crosslinked polyolefin foam comprising mixing a resin comprising a first constituent and a second constituent in an extruder, adding a blowing agent to the resulting mixture, and extruding the resultant mix into foam form, wherein the first constituent is a Ziegler-Natta catalyzed linear low density

polyethylene and the second constituent is a polypropylene, and wherein the Ziegler-Natta catalyzed linear low density polyolefin has a polydispersity of less than 10 and a melt flow index less than 10g/10 minutes.

69. (Original) The method of Claim 68, wherein the second constituent is a high-melt strength polypropylene.

70. (Original) The method of Claim 68, wherein the first constituent is present in an amount from 1% to 85% by weight of the total polyolefin content.

71. (Original) The method of Claim 70, wherein the first constituent is present in an amount from 5% to 10% by weight of the total polyolefin content.

72. (Original) The method of Claim 71, wherein the first constituent is present in an amount from 10% to 15% by weight of the total polyolefin content.

73. (Original) The method of Claim 72, wherein the first constituent is present in an amount from 15% to 20% by weight of the total polyolefin content.

74. (Original) The method of Claim 73, wherein the first constituent is present in an amount from 20% to 25% by weight of the total polyolefin content.

75. (Original) The method of Claim 74, wherein the first constituent is present in an amount from 25% to 30% by weight of the total polyolefin content.

76. (Original) The method of Claim 75, wherein the first constituent is present in an amount from 30% to 35% by weight of the total polyolefin content.

77. (Original) The method of Claim 76, wherein the first constituent is present in an amount from 35% to 40% by weight of the total polyolefin content.

78. (Original) The method of Claim 68, wherein the foam is extruded to a density of less than 90 kg/m^3.

79. (Original) The method of Claim 68, wherein the foam is a closed-cell foam.

80. (Original) The method of Claim 68, wherein the density is from 917 to 930 kg/m^3.

81. (Original) The method of Claim 68, wherein the crystallization temperatures of the first and second constituents differ by more than 8°C.

82. (Original) The method of Claim 81, wherein the crystallization temperatures of the first and second constituents differ by more than 12°C.

83. (Original) The method of Claim 68, wherein the first constituent has a melt flow index of less than 5g/10 minutes.

84. (Original) The method of Claim 83, wherein the first constituent has a melt flow index of less than 3g/10 minutes.

85. (Original) The method of Claim 68, wherein the polydispersity of the Ziegler-Natta catalyzed linear low density polyolefin is less than 8.

86. (Original) The method of Claim 85, wherein the polydispersity of the Ziegler-Natta catalyzed linear low density polyolefin is less than 5.

87. (Original) The method of Claim 68, further including mixing nucleating agents and aging agents with the first and second constituents.

88. (Original) The method of Claim 68, wherein the resultant mixture is extruded in a twin-screw extruder.

89. (Original) The method of Claim 68 further including controlling the melt temperature of the mix during extruding.

90. (Original) The method of Claim 89, wherein controlling the melt temperature includes matching the melt temperature of the mix to a pre-determined datum.

91. (Original) The method of Claim 90, wherein the pre-determined datum is determined by extruding 100% of the second constituent.

92. (Original) The foam produced according to the method of Claim 68.